FULFILLMENT MANAGEMENT SYSTEM FOR MANAGING ATP DATA IN A DISTRIBUTED SUPPLY CHAIN ENVIRONMENT

CROSS-REFERENCE TO RELATED APPLICATIONS

This Application claims the benefit under 35 U.S.C. § 119(e) of U.S. Provisional Application Serial No. 60/238,307, filed October 5, 2000.

This Application is also related to:

U.S. Application Serial No. 08/491,167, filed June 16, 1995 by Kennedy et al. for a "System and Method for Managing Available to Promise (ATP)";

U.S. Application Serial No. 08/802,434, filed February 18, 1997 by Kennedy et al. for a "System and Method for Managing ATP";

U.S. Application Serial No. 09/398,171, filed September 17, 1999 by Kennedy et al. for a "System and Method for Managing ATP Data in a Distributed Supply Chain Planning Environment"; and

U.S. Application Serial No. __/___,___, filed October 4, 2001 by Kumar et al. for a "Collaborative Fulfillment in a Distributed Supply Chain Environment."

TECHNICAL FIELD OF THE INVENTION

This invention relates generally to the field of supply chain management, order fulfillment, and planning, and more particularly to a fulfillment management system for managing available-to-promise (ATP) data in a distributed supply chain environment.

BACKGROUND OF THE INVENTION

A large and complex supply chain typically involves multiple entities each maintaining information about a portion of the supply chain. For example, a supplier may maintain information about when its products will become available for shipment to a customer. Entities may be faced with difficulties in obtaining products from or providing products to various other entities in the supply chain. For example, customers and suppliers may have logically or geographically distributed computer systems that maintain information about the supply chain. The distributed computer systems may make it difficult for any customer or supplier to gain visibility into the supply chain. A lack of detailed visibility into extended supply chain operations often prevents suppliers from quoting accurate delivery dates and meeting customer orders in a timely manner. Even when there is adequate visibility, a lack of integration between front-end and back-end business objectives may result in lower margin products using up capacity, important market channels receiving worse service than less important market channels, and other sub-optimal commitments. In addition, once delivery dates and other commitments have been made, it may be necessary to monitor the commitments throughout the production and logistics execution process to determine the effect of unexpected supply and demand changes.

SUMMARY OF THE INVENTION

According to the present invention, disadvantages and problems associated with supply chain planning and order fulfillment within a distributed network environment have been substantially reduced or eliminated.

In one embodiment of the invention, a fulfillment management system includes a database operable to store product availability information associated with at least one product. The system also includes one or more processors collectively operable to receive at least one component available-to-promise (ATP) request. Each component ATP request corresponds to an ATP request line-item for a desired product. The one or more processors are also collectively operable to retrieve from the database at least a portion of the product availability information associated with the desired product for each component ATP request, determine an ATP response for each component ATP request using the retrieved product availability information, generate a component quotation for each component ATP request according to the corresponding ATP response, and communicate the component quotation for consolidation with other component quotations.

Numerous technical advantages are provided according to various embodiments of the present invention. Particular embodiments of the invention may exhibit none, some, or all of the following advantages depending on the implementation. For example, in one embodiment, a fulfillment management system is provided. In particular, the fulfillment management system may cooperate with other elements in a supply chain to concurrently and intelligently manage order promising and fulfillment. As an example, the fulfillment management system may assist a fulfillment server in managing order promising and fulfillment for complex multiple line-item ATP requests from a potentially very large number of clients according to specified user, customer, supplier, and any other business constraints.

Another advantage of at least some embodiments of the invention is that the fulfillment management system may communicate rich responses to the fulfillment server, where the responses can include numerous options simultaneously. This reduces communication between the fulfillment server and the fulfillment management system, which may help to conserve bandwidth and reduce latency. This may also allow the use of the fulfillment management system in interactive systems